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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/581,216

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Bruno Lebet

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EXAMINER

WEISZ, DAVID G

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

03/04/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/581,216	<b>Applicant(s)</b> LEBRET ET AL.	
	<b>Examiner</b> DAVID WEISZ	<b>Art Unit</b> 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 March 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____.                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20070402</u> .  | 6) <input type="checkbox"/> Other: ____.                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 101 and 35 USC § 112***

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-19 provide for the use of at least one polymer, but, since the claims do not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

4. Claims 1-19 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

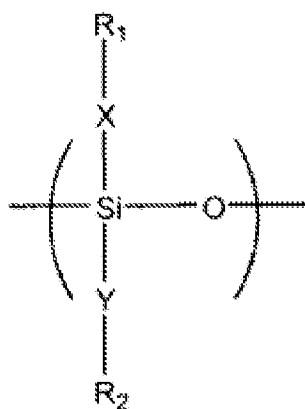
A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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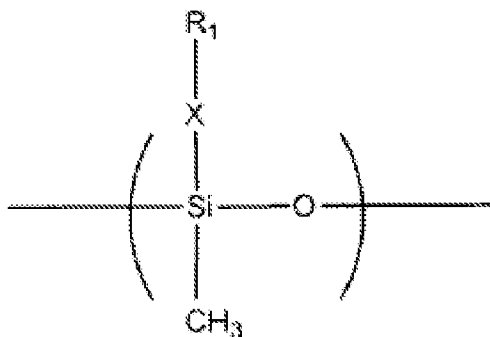
6. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by McGill et al "The design of functionalized silicone polymers for chemical sensor detection of nitroaromatic compounds".

Regarding claims 1-3, McGill discloses the use of at least one polymer comprising at least one siloxane repeating unit corresponding to the general formula:



In which X and Y represent linear hydrocarbon groups, and R1 and R2 represent a hydrogen atom, a CN group or C(Z)3 groups, wherein Z represents a halogen atom  
**(Figure 2).**

Additionally, McGill discloses the siloxane repeating unit:



Wherein X and R1 have the same meaning as above (**Figure 2**).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 4-6, 8-11 and 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over McGill et al "The design of functionalized silicone polymers for chemical sensor detection of nitroaromatic compounds" as applied to claims 1-3 above, in view of Aker et al (US 2003/0165407).

Regarding claims 4-6, McGill discloses all of the claim limitations as set forth above. However, the reference does not claim that the siloxane repeating unit is trifluoropropylmethylsiloxane, more specifically polytrifluoropropylmethylsiloxane.

Aker discloses a chemical sensor that utilizes trifluoropropylmethylpolysiloxanes as a thin-filmed polymer coating. Additionally, the reference states that using such a gas chromatographic stationary phase coating is critical for analyte interaction **[0034]**.

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Such a repeating polymer unit can have an average molecular weight falling within the range of 50 to 100,000.

The references are analogous because they are both directed towards chemical sensors having a thin film polymer coating.

It would have been obvious to one having ordinary skill in the art at the time of the invention to use the polymer of Aker in the sensor of McGill because it is critical for analyte interaction.

Regarding claim 8, modified McGill discloses all of the claim limitations as set forth above. Additionally, the reference discloses that the polymer is used in the form of a thin film covering one or both faces of a substrate (**Aker, [0034]**).

Regarding claim 9, modified McGill discloses all of the claim limitations as set forth above. Additionally, the reference discloses that the thin film is from 10 angstroms to 100 microns thick (**Aker, [0036]**).

Regarding claim 10, modified McGill discloses all of the claim limitations as set forth above. Additionally, the reference discloses that the thin film is prepared via spin-coating (**Aker, [0060]**).

Regarding claim 11, modified McGill discloses all of the claim limitations as set forth above. Additionally, the reference discloses that detection is performed by measuring conductivity in the polymer (**Aker, [0013]**).

Regarding claims 16-19, modified McGill discloses all of the claim limitations as set forth above. Additionally, the reference discloses that the compound to be detected is a nitroaromatic compound such as trinitrotoluene, the explosive TNT (**Aker, [0015]**).

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10. Claims 7 and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over McGill et al "The design of functionalized silicone polymers for chemical sensor detection of nitroaromatic compounds" as applied to claims 1-3 above, further in view of Lewis et al (US 6,387,329).

Regarding claims 7 and 12-15, McGill discloses all of the claim limitations as set forth above. However, the reference does not disclose carbon-black conductive fillers or that the sensor is a gravimetric sensor such as a quartz microbalance sensor.

Lewis discloses resistive and gravimetric polymer sensors for detecting nitro-compounds in gases. Additionally, Lewis discloses that a quartz crystal microbalance array of sensors comprising polymer films exhibits improved performance in vapor sensing. The reference also discloses that the sensor may utilize a carbon-black polymer composite (**Col9/L24-40**).

The references are analogous because they are both directed toward chemical sensors incorporating polymer films.

It would have been obvious to one having ordinary skill in the art at the time of the invention to combine the sensor components of Lewis with the sensor of McGill because combining the disclosed sensing components with polymer films exhibits improved performance in vapor sensing, thus increasing effectiveness of the sensor.

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

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under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID WEISZ whose telephone number is (571)270-7073. The examiner can normally be reached on Monday - Thursday, 7:30 a.m. - 5:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (571)-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. W./

Examiner, Art Unit 1797

/Arlen Soderquist/

Primary Examiner, Art Unit 1797